

INTERNATIONAL SEARCH REPORT

PCT/GB 03/01441

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03L7/07 H03L7/085 H03L7/099 H03L7/087

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | WO 99 33182 A (KONINKL PHILIPS ELECTRONICS NV ;PHILIPS SVENSKA AB (SE)) 1 July 1999 (1999-07-01) page 3, line 8 -page 10, line 1 | 1-22 |
| X | US 5 790 614 A (POWELL WILLIAM E) 4 August 1998 (1998-08-04) column 9, line 1 -column 11, line 46 | 1-22 |
| X | EP 1 104 111 A (LUCENT TECHNOLOGIES INC) 30 May 2001 (2001-05-30) column 4, line 30 -column 6, line 22 | 1-22 |
| X | EP 0 698 968 A (DEUTSCHE TELEPHONWERK KABEL) 28 February 1996 (1996-02-28) column 2, line 10 -column 3, line 30 | 1-22 |
| | -/-- | |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

16 October 2003

Date of mailing of the international search report

05. 11. 03

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | WO 00 18008 A (FRIEDRICH DIRK ;ROZMANN MICHAEL (DE); SIEMENS AG (DE)) 30 March 2000 (2000-03-30) the whole document | 1 |
| X | US 6 075 474 A (GABET PASCAL ET AL) 13 June 2000 (2000-06-13) | 23 |
| Y | the whole document | 24-59 |
| X | US 4 901 265 A (KERR RICHARD J ET AL) 13 February 1990 (1990-02-13) | 23 |
| Y | the whole document | 24-59 |
| Y | WO 94 26033 A (NOKIA TELECOMMUNICATIONS OY ;PELTOLA SEPPO (FI)) 10 November 1994 (1994-11-10) the whole document | 24-59 |
| X | EP 1 160 984 A (SANYO ELECTRIC CO ;TOKYO SANYO ELECTRIC CO (JP)) 5 December 2001 (2001-12-05) column 8, line 4 -column 8, line 51; figures 2,11 | 60-90 |
| X | US 4 888 564 A (ISHIGAKI YUKINOBU) 19 December 1989 (1989-12-19) the whole document | 60-90 |
| X | EP 0 526 227 A (NIPPON ELECTRIC CO) 3 February 1993 (1993-02-03) the whole document | 60-90 |

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-22

Subject 1 claims a hybrid numeric-analog clock synchroniser for establishing a clock or carrier frequency locked to a timing reference.

2. Claims: 23 - 59

Subject 2 claims a high performance number-controlled oscillator for use as a NCO in the hybrid numeric-analog clock synchroniser defined in subject 1.

3. Claims: 60 - 90

Subject 3 claims a combined clock- and frame asynchrony detector for use as the second detector for the cascade form of the hybrid numeric-analog clock synchroniser defined in subject 1.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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